General

Guideline Title

Diagnosis and treatment of degenerative lumbar spinal stenosis.

Bibliographic Source(s)

North American Spine Society (NASS). Diagnosis and treatment of degenerative lumbar spinal stenosis. Burr Ridge (IL): North American Spine Society (NASS); 2011. 104 p. [542 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: North American Spine Society (NASS). Diagnosis and treatment of degenerative lumbar spinal stenosis. Burr Ridge (IL): North American Spine Society (NASS); 2007 Jan. 262 p. [394 references]

Recommendations

Major Recommendations

The grades of recommendations (A-C, I) and levels of evidence (I-V) are defined at the end of the Major Recommendations field.

Recommendations for Diagnosis and Treatment of Degenerative Lumbar Spinal Stenosis

Diagnosis and Imaging

What are the most appropriate historical and physical findings consistent with the diagnosis of degenerative lumbar spinal stenosis?

The diagnosis of lumbar spinal stenosis may be considered in older patients presenting with a history of gluteal or lower extremity symptoms exacerbated by walking or standing which improves or resolves with sitting or bending forward. Patients whose pain is not made worse with walking have a low likelihood of stenosis.

Grade of Recommendation: C

There is insufficient evidence to make a recommendation for or against the use of self-administered questionnaires to improve accuracy of the diagnosis of spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

There is insufficient evidence to make a recommendation for or against certain physical findings for the diagnosis of degenerative lumbar spinal

stenosis including an abnormal Romberg test, thigh pain exacerbated with extension, sensorimotor deficits, leg cramps and abnormal Achilles tendon reflexes.

Grade of Recommendation: I (Insufficient Evidence)

There is insufficient evidence to make a recommendation for or against the diagnostic reliability of patient-reported dominance of lower extremity pain and low back pain.

Grade of Recommendation: I (Insufficient Evidence)

What are the most appropriate diagnostic tests for degenerative lumbar spinal stenosis?

In patients with history and physical examination findings consistent with degenerative lumbar spinal stenosis, magnetic resonance imaging (MRI) is suggested as the most appropriate, noninvasive test to confirm the presence of anatomic narrowing of the spinal canal or the presence of nerve root impingement.

Grade of Recommendation: B

In patients with history and physical examination findings consistent with degenerative lumbar spinal stenosis, for whom MRI is either contraindicated or inconclusive, computed tomography myelography (CTM) is suggested as the most appropriate test to confirm the presence of anatomic narrowing of the spinal canal or the presence of nerve root impingement.

Grade of Recommendation: B

In patients with history and physical examination findings consistent with degenerative lumbar spinal stenosis for whom MRI and CTM are contraindicated, inconclusive or inappropriate, computed tomography (CT) is the preferred test to confirm the presence of anatomic narrowing of the spinal canal or the presence of nerve root impingement.

Grade of Recommendation: B

MRI or CT with axial loading is suggested as a useful adjunct to routine imaging in patients who have clinical signs and symptoms of lumbar spinal stenosis, a dural sac area (DSA) of less than 110 mm^2 at one or more levels, and suspected but not verified central or lateral stenosis on routine unloaded MRI or CT.

Grade of Recommendation: B

It is suggested that readers use well-defined, articulated and validated criteria for anatomic canal narrowing on MRI, CTM and CT to improve interobserver and intraobserver reliability.

Grade of Recommendation: B

There is insufficient evidence to make a recommendation for or against a correlation between clinical symptoms or function with the presence of anatomic narrowing of the spinal canal on MRI, CTM or CT.

Grade of Recommendation: I (Insufficient Evidence)

In the absence of reliable evidence, it is the work group's opinion that imaging studies be considered as a first line diagnostic test in the diagnosis of degenerative lumbar spinal stenosis.

Work Group Consensus Statement

Electromyographic paraspinal mapping is suggested to confirm the diagnosis of degenerative lumbar spinal stenosis in patients with mild or moderate symptoms and radiographic evidence of stenosis.

Grade of Recommendation: B

There is insufficient evidence to make a recommendation for or against the use of F wave, H reflex, motor evoked potential (MEP), motor nerve conduction studies, somatosensory evoked potentials (SSEP), dermatomal sensory evoked potentials (DSEP) and lower extremity electromyography (EMG) in the confirmation of lumbar spinal stenosis. These studies may be used to help identify other comorbidities.

Grade of Recommendation: I (Insufficient Evidence)

Medical and Interventional Treatment

Do medical/interventional treatments improve outcomes in the management of spinal stenosis compared to the natural history of the disease?

An extensive review of all articles cited in the reference section of the original guideline document found no direct comparison of active treatment (medical/interventional) to an untreated control group (natural history).

What is the role of pharmacological treatment in the management of spinal stenosis?

There is insufficient evidence to make a recommendation for or against the use of pharmacological treatment in the management of spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

What is the role of physical therapy/exercise in the treatment of spinal stenosis?

There is insufficient evidence to make a recommendation for or against the use of physical therapy or exercise as stand-alone treatments for degenerative lumbar spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

In the absence of reliable evidence, it is the work group's opinion that a limited course of active physical therapy is an option for patients with lumbar spinal stenosis.

Work Group Consensus Statement

What is the role of manipulation in the treatment of spinal stenosis?

There is insufficient evidence to make a recommendation for or against spinal manipulation for the treatment of lumbar spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

What is the role of contrast-enhanced, fluoroscopic guidance in the routine performance of epidural steroid injections for the treatment of lumbar spinal stenosis?

Contrast-enhanced fluoroscopy is recommended to guide epidural steroid injections to improve the accuracy of medication delivery.

Grade of Recommendation: A

What is the role of epidural steroid injections in the treatment of spinal stenosis?

Interlaminar epidural steroid injections are suggested to provide short-term (two weeks to six months) symptom relief in patients with neurogenic claudication or radiculopathy. There is, however, conflicting evidence concerning long-term (21.5-24 months) efficacy.

Grade of Recommendation: B

A multiple injection regimen of radiographically-guided transforaminal epidural steroid injection or caudal injections is suggested to produce medium-term (3-36 months) relief of pain in patients with radiculopathy or neurogenic intermittent claudication (NIC) from lumbar spinal stenosis.

Grade of Recommendation: C

What is the role of ancillary treatments such as bracing, traction, electrical stimulation and transcutaneous electrical stimulation (TENS) in the treatment of lumbar spinal stenosis?

The use of a lumbosacral corset is suggested to increase walking distance and decrease pain in patients with lumbar spinal stenosis. There is no evidence that results are sustained once the brace is removed.

Grade of Recommendation: B

There is insufficient evidence to make a recommendation for or against traction, electrical stimulation or TENS for the treatment of patients with lumbar spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

There is insufficient evidence to make a recommendation for or against acupuncture in the treatment of patients with lumbar spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

What is the long-term (two to 10 years) result of medical/interventional management of spinal stenosis?

Medical/interventional treatment may be considered to provide long-term (2-10 years) improvement in patients with degenerative lumbar spinal stenosis and has been shown to improve outcomes in a large percentage of patients.

Grade of Recommendation: C

Surgical Treatment

Does surgical decompression alone improve surgical outcomes in the treatment of spinal stenosis compared to medical/interventional treatment?

Decompressive surgery is suggested to improve outcomes in patients with moderate to severe symptoms of lumbar spinal stenosis.

Grade of Recommendation: B

Medical/interventional treatment may be considered for patients with moderate symptoms of lumbar spinal stenosis.

Grade of Recommendation: C

In the absence of evidence for or against any specific treatment, it is the work group's recommendation that medical/interventional treatment be considered for patients with mild symptoms of lumbar spinal stenosis.

Work Group Consensus Statement

Note: Patients with mild symptoms are generally excluded from these comparative studies because they would not be considered surgical candidates.

There is insufficient evidence at this time to make a recommendation for or against the placement of an interspinous process spacing device in patients with lumbar spinal stenosis.

Grade of Recommendation: I (Insufficient Evidence)

Does the addition of lumbar fusion, with or without instrumentation, to surgical decompression improve surgical outcomes in the treatment of spinal stenosis compared to treatment by decompression alone?

Decompression alone is suggested for patients with leg predominant symptoms without instability.

Grade of Recommendation: B

What is the long-term result (4+ years) of surgical management of spinal stenosis?

Surgical treatment may be considered to provide long-term (4+ years) improvement in patients with degenerative lumbar spinal stenosis and has been shown to improve outcomes in a large percentage of patients.

Grade of Recommendation: C

Surgical decompression may be considered in patients aged 75 or greater with lumbar spinal stenosis.

Grade of Recommendation: C

Definitions:

Grades of Recommendation

A. Good evidence (Level I studies with consistent finding) for or against recommending intervention.

B. Fair evidence (Level II or III studies with consistent findings) for or against recommending intervention.

C. Poor quality evidence (Level IV or V studies) for or against recommending intervention.

I. Insufficient or conflicting evidence not allowing a recommendation for or against intervention.

Levels of Evidence for Primary Research Question[1]

	Types of Studies			
	Therapeutic Studies – Investigating the results of treatment	Therapeutic Studies – Investigating the results of treatment	Diagnostic Studies – Investigating a diagnostic test	Economic and Decision Analyses – Developing an economic or decision model
Level I	• High quality randomized trial with statistically significant difference or no statistically significant difference but narrow confidence intervals • Systematic review[2] of Level I RCTs (and study results were homogenous[3])	• High quality prospective study[4] (all patients were enrolled at the same point in their disease with ≥80% follow-up of enrolled patients) • Systematic review[2] of Level I studies	• Testing of previously developed diagnostic criteria on consecutive patients (with universally applied reference "gold" standard) • Systematic review[2] of Level I studies	• Sensible costs and alternatives; values obtained from many studies; with multiway sensitivity analyses • Systematic review[2] of Level I studies
Level II	• Lesser quality RCT (e.g., <80% follow-up, no blinding, or improper randomization) • Prospective[4] comparative study[5] • Systematic review[2] of Level II studies or Level 1 studies with inconsistent results	• Retrospective[6] study • Untreated controls from an RCT • Lesser quality prospective study (e.g., patients enrolled at different points in their disease or <80% follow-up) • Systematic review[2] of Level II studies	• Development of diagnostic criteria on consecutive patients (with universally applied reference "gold" standard) • Systematic review[2] of Level II studies	• Sensible costs and alternatives; values obtained from limited studies; with multiway sensitivity analyses • Systematic review[2] of Level II studies
Level III	• Case control study[7] • Retrospective[6] comparative study[5] • Systematic review[2] of Level III studies	• Case control study[7]	• Study of nonconsecutive patients; without consistently applied reference "gold" standard • Systematic review[2] of Level III studies	• Analyses based on limited alternatives and costs; and poor estimates • Systematic review[2] of Level III studies
Level IV	Case Series[8]	Case Series	• Case-control study • Poor reference standard	• Analyses with no sensitivity analyses
Level V	Expert Opinion	Expert Opinion	Expert Opinion	Expert Opinion

RCT = randomized controlled trial

A complete assessment of quality of individual studies requires critical appraisal of all aspects of the study design.
A combination of results from two or more prior studies.
Studies provided consistent results.
Study was started before the first patient enrolled.
Patients treated one way (e.g., cemented hip arthroplasty) compared with a group of patients treated in another way (e.g., uncemented hip arthroplasty) at the same institution.
The study was started after the first patient enrolled.
Patients identified for the study based on their outcome, called "cases" (e.g., failed total arthroplasty) are compared to those who did not have outcome, called "controls" (e.g., successful total hip arthroplasty).
Patients treated one way with no comparison group of patients treated in another way.

Linking Levels of Evidence to Grades of Recommendation

Grade of Recommendation	Standard Language	Levels of Evidence	
A	Recommended	Two or more consistent Level I studies	
B	Suggested	One Level I study with additional supporting Level II or III studies	Two or more consistent Level II or III studies
C	May be considered; is an option	One Level I, II or III study with supporting Level IV studies	Two or more consistent Level IV studies
I (Insufficient or Conflicting Evidence)	Insufficient evidence to make recommendation for or against	A single Level I, II, III or IV study without other supporting evidence	More than one study with inconsistent findings*

*Note that in the presence of multiple consistent studies, and a single outlying, inconsistent study, the Grade of Recommendation will be based on the level of the consistent studies.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Degenerative lumbar spinal stenosis

Note: Degenerative lumbar spinal stenosis describes a condition in which there is diminished space available for the neural and vascular elements in the lumbar spine secondary to degenerative changes in the spinal canal. When symptomatic, this causes a variable clinical syndrome of gluteal and/or lower extremity pain and/or fatigue which may occur with or without back pain.

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Anesthesiology

Chiropractic

Family Practice

Internal Medicine

Neurological Surgery

Neurology

Nursing

Orthopedic Surgery

Physical Medicine and Rehabilitation

Radiology

Rheumatology

Intended Users

Allied Health Personnel

Health Care Providers

Nurses

Physicians

Guideline Objective(s)

- To provide evidence-based recommendations to address key clinical questions surrounding the diagnosis and treatment of degenerative lumbar spinal stenosis
- To reflect contemporary treatment concepts for symptomatic degenerative lumbar spinal stenosis as reflected in the highest quality clinical literature available on this subject as of July 2010
- To assist in delivering optimum, efficacious treatment and functional recovery from this spinal disorder

Target Population

- Adults (18 years or older) with a chief complaint of neurogenic claudication without associated spondylolisthesis
- Adults (18 years or older) diagnosed with stenosis of the lumbar spine

Note: The nature of the pain and associated patient characteristics (e.g., age) should be more typical of a diagnosis of spinal stenosis than herniated disc.

Interventions and Practices Considered

Diagnosis/Evaluation

1. History and physical examination
2. Imaging studies
    - Magnetic resonance imaging (MRI)

- Computed tomography myelography (CTM)
- Computed tomography (CT)
- MRI or CT with axial loading
- Use of validated criteria for anatomic canal narrowing on MRI, CTM and CT
- Correlation between clinical symptoms or function with the presence of anatomic narrowing of the spinal canal on MRI, CTM or CT (insufficient evidence to recommend)

3. Electromyographic paraspinal mapping for confirmation
4. Use of F wave, H reflex, motor evoked potential (MEP), motor nerve conduction studies, somatosensory evoked potentials (SSEP), dermatomal sensory evoked potentials (DSEP) and lower extremity electromyography (EMG) in the confirmation of lumbar spinal stenosis (insufficient evidence to recommend)

Management/Treatment

1. Pharmacological treatment including intramuscular or intranasal calcitonin, methylcobalamin, intravenous lipoprostaglandin E(1), prostaglandin E(2), and gabapentin (insufficient evidence to recommend)
2. Physical therapy and exercises (insufficient evidence to recommend as stand-alone treatment)
3. Spinal manipulation (insufficient evidence to recommend)
4. Contrast-enhanced fluoroscopy to guide epidural steroid injections
5. Interlaminar epidural steroid injections
6. Lumbosacral corset
7. Ancillary treatments, such as traction, electrical stimulation, transcutaneous electrical stimulation (TENS), acupuncture (insufficient evidence to recommend)
8. Decompressive surgery
9. Interspinous process spacing device (insufficient evidence to recommend)

Major Outcomes Considered

- Sensitivity and specificity of diagnostic tests
- Visual analog scale (VAS) score
- Quality of life/basic activities of daily living (BADL)
- Walking distance
- Patient satisfaction
- Postoperative complication rate
- Age-related outcomes

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Identification of Clinical Questions

Trained guideline participants were asked to submit a list of clinical questions that the guideline should address. The lists were compiled into a master list, which was then circulated to each member with a request that they independently rank the questions in order of importance for consideration in the guideline. The most highly ranked questions, as determined by the participants, served to focus the guideline.

Identification of Search Terms and Parameters

One of the most crucial elements of evidence analysis to support development of recommendations for appropriate clinical care is the comprehensive literature search. Thorough assessment of the literature is the basis for the review of existing evidence and the formulation of

evidence-based recommendations. In order to ensure a thorough literature search, North American Spine Society (NASS) has instituted a Literature Search Protocol (Appendix E in the original guideline document) which was followed to identify literature for evaluation in guideline development. In keeping with the Literature Search Protocol, work group members identified appropriate search terms and parameters to direct the literature search.

Specific search strategies, including search terms, parameters and databases searched, are documented in Appendix E of the original guideline and in the technical report that accompanies this guideline (see the "Availability of Companion Documents" field).

Completion of the Literature Search

Once each work group identified search terms/parameters, the literature search was implemented by a medical/research librarian, consistent with the Literature Search Protocol.

Following these protocols ensures that NASS recommendations (1) are based on a thorough review of relevant literature; (2) are truly based on a uniform, comprehensive search strategy; and (3) represent the current best research evidence available. NASS maintains a search history in EndNote™, for future use or reference.

Review of Search Results/Identification of Literature to Review

Work group members reviewed all abstracts yielded from the literature search and identified the literature they would review in order to address the clinical questions, in accordance with the Literature Search Protocol. Members identified the best research evidence available to answer the targeted clinical questions. That is, if Level I, II and/or III literature is available to answer specific questions, the work group was not required to review Level IV or V studies.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus (Committee)

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence for Primary Research Question[1]

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Level IV	Case Series[8]	Case Series	• Case-control study • Poor reference standard	• Analyses with no sensitivity analyses
Level V	Expert Opinion	Expert Opinion	Expert Opinion	Expert Opinion

RCT = randomized controlled trial

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A combination of results from two or more prior studies.
Studies provided consistent results.

Study was started before the first patient enrolled.
Patients treated one way (e.g., cemented hip arthroplasty) compared with a group of patients treated in another way (e.g., uncemented hip arthroplasty) at the same institution.
The study was started after the first patient enrolled.
Patients identified for the study based on their outcome, called "cases" (e.g., failed total arthroplasty) are compared to those who did not have outcome, called "controls" (e.g., successful total hip arthroplasty).
Patients treated one way with no comparison group of patients treated in another way.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Evidence Analysis

Members independently developed evidentiary tables summarizing study conclusions, identifying strengths and weaknesses and assigning levels of evidence. In order to systematically control for potential biases, at least two work group members reviewed each article selected and independently assigned levels of evidence to the literature using the North American Spine Society (NASS) levels of evidence. Any discrepancies in scoring have been addressed by two or more reviewers. The consensus level (the level upon which two thirds of reviewers were in agreement) was then assigned to the article.

As a final step in the evidence analysis process, members identified and documented gaps in the evidence to educate guideline readers about where evidence is lacking and help guide further needed research by NASS and other societies.

Methods Used to Formulate the Recommendations

Expert Consensus (Nominal Group Technique)

Description of Methods Used to Formulate the Recommendations

Identification of Work Groups

Multidisciplinary teams were assigned to work groups and assigned specific clinical questions to address. Because the North American Spine Society (NASS) is comprised of surgical, medical, and interventional specialists, it is imperative to the guideline development process that a cross-section of NASS membership is represented on each group. This also helps to ensure that the potential for inadvertent biases in evaluating the literature and formulating recommendations is minimized.

Formulation of Evidence-Based Recommendations and Incorporation of Expert Consensus

Work groups held webcasts to discuss the evidence-based answers to the clinical questions, the grades of recommendations, and the incorporation of expert consensus. Expert consensus was incorporated only where Level I-IV evidence is insufficient and the work group deemed that a recommendation is warranted. Transparency in the incorporation of consensus is crucial, and all consensus-based recommendations made in this guideline very clearly indicate that Level I-IV evidence is insufficient to support a recommendation and that the recommendation is based only on expert consensus.

Consensus Development Process

Voting on guideline recommendations was conducted using a modification of the nominal group technique in which each work group member independently and anonymously ranked a recommendation on a scale ranging from 1 ("extremely inappropriate") to 9 ("extremely appropriate"). Consensus was obtained when at least 80% of work group members ranked the recommendation as 7, 8, or 9. When the 80% threshold was not attained, up to three rounds of discussion and voting were held to resolve disagreements. If disagreements were not resolved after these rounds, no recommendation was adopted.

After the recommendations were established, work group members developed the guideline content, addressing the literature which supports the recommendations.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendation

A. Good evidence (Level I studies with consistent finding) for or against recommending intervention.

B. Fair evidence (Level II or III studies with consistent findings) for or against recommending intervention.

C. Poor quality evidence (Level IV or V studies) for or against recommending intervention.

I. Insufficient or conflicting evidence not allowing a recommendation for or against intervention.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

The North American Spine Society (NASS) has ensured that representatives from medical, interventional and surgical spine specialties have participated in the development and review of all NASS guidelines. To ensure broad-based representation, NASS has invited and welcomes input from other societies and specialties.

Submission of the Draft Guidelines for Review/Comment

Guidelines were submitted to the full Evidence-Based Guideline Development Committee and the Research Council Director for review and comment. Revisions to recommendations were considered for incorporation only when substantiated by a preponderance of appropriate level evidence.

Submission for Board Approval

Once any evidence-based revisions were incorporated, the drafts were prepared for NASS Board review and approval. Edits and revisions to recommendations and any other content were considered for incorporation only when substantiated by a preponderance of appropriate level evidence.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Accurate diagnosis and effective treatment of degenerative lumbar spinal stenosis

Potential Harms

- Diagnostic tests may lead to false positive or false negative results.
- There is a higher complication rate and less successful pain relief with decompressive surgery in elderly diabetic patients compared with nondiabetic patients.
- Computed tomography (CT) exposes patients to radiation.

Qualifying Statements

Qualifying Statements

- This guideline does not represent a "standard of care", nor is it intended as a fixed treatment protocol. It is anticipated that there will be patients who will require less or more treatment than the average. It is also acknowledged that in atypical cases, treatment falling outside this guideline will sometimes be necessary. This guideline should not be seen as prescribing the type, frequency, or duration of intervention. Treatment should be based on the individual patient's need and doctor's professional judgment and experience. This document is designed to function as a guideline and should not be used as the sole reason for denial of treatment and services. This guideline is not intended to expand or restrict a health care provider's scope of practice or to supersede applicable ethical standards or provisions of law.
- The clinical guideline should not be construed as including all proper methods of care or excluding other acceptable methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding any specific procedure or treatment is to be made by the physician and patient in light of all circumstances presented by the patient and the needs and resources particular to the locality or institution.

Implementation of the Guideline

Description of Implementation Strategy

These guidelines are developed for educational purposes to assist practitioners in their clinical decision-making processes. It is anticipated that where evidence is very strong in support of recommendations, these recommendations will be operationalized into performance measures.

Identification and Development of Performance Measures

The recommendations will be reviewed by a group experienced in performance measure development (e.g., the American Medical Association [AMA] Physician's Consortium for Performance Improvement) to identify those recommendations rigorous enough for measure development. All relevant medical specialties involved in the guideline development and at the Consortium will be invited to collaborate in the development of evidence-based performance measures related to spine care.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

North American Spine Society (NASS). Diagnosis and treatment of degenerative lumbar spinal stenosis. Burr Ridge (IL): North American Spine Society (NASS); 2011. 104 p. [542 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2002 (revised 2011)

Guideline Developer(s)

North American Spine Society - Medical Specialty Society

Source(s) of Funding

North American Spine Society (NASS)

Guideline Committee

North American Spine Society (NASS) Evidence-Based Clinical Guidelines Committee

Composition of Group That Authored the Guideline

Committee Members: D. Scott Kreiner, MD, Committee Co-Chair, Natural History Co-Chair; William O. Shaffer, MD, Committee Co-Chair, Natural History Co-Chair; Jamie Baisden, MD, Outcome Measures Chair; Thomas Gilbert, MD, Diagnosis/Imaging Chair; Jeffrey Summers, MD, Medical/Interventional Treatment Chair; John Toton, MD, Surgical Treatment Chair; Steven Hwang, MD; Richard Mendel, MD; Charles Reitman, MD

Financial Disclosures/Conflicts of Interest

Disclosure of Potential Conflicts of Interest

All participants involved in guideline development have disclosed potential conflicts of interest to their colleagues and their potential conflicts have been documented in the original guideline document. Participants have been asked to update their disclosures regularly throughout the guideline development process.

Financial Disclosure

This clinical guideline was developed and funded in its entirety by the North American Spine Society (NASS). All participating authors have

disclosed potential conflicts of interest consistent with NASS' disclosure policy. Disclosures are listed below:

- Jamie L. Baisden Nothing to disclose.
- Thomas J. Gilbert Scientific Advisory Board: Steady State Imaging (Financial, option on 20,000 shares); Other Office: Medical Director (Financial, option on 20,000 shares).
- Steven W. Hwang Nothing to disclose.
- D. Scott Kreiner Nothing to disclose.
- Richard C. Mendel Nothing to disclose.
- Charles A. Reitman Nothing to disclose.
- William O. Shaffer Consulting: DePuy Spine (Financial, Level B consulting, iliolumbar module 12/09 and none since, Paid directly to institution/employer); Trips/Travel: Synthes (Financial, ProDisc C course. Paid himself for travel, lodging, meals and car rental. Training at no cost); Relationships Outside the One Year Requirement: DePuy Spine (Upcoming Committee Meeting [Cervical Epidural Work Group], 01/2007, Royalties, Level C for sacropelvic module).
- Jeffrey T. Summers Board of Directors: First Choice Insurance Group (Financial, Pain Management representative to the Board. There is a Level A remuneration for each Board meeting attended during weekdays. In the past year, paid at Level A), International Spine Intervention Society (ISIS) (Nonfinancial, on the ISIS Board of Directors. Serves as Treasurer. Travel expenses (airfare, hotel and parking) are provided when traveling to a Board meeting (official business only).
- John F. Toton Nothing to disclose.

Range Key:

Level A. $100 to $1,000
Level B. $1,001 to $10,000
Level C. $10,001 to $25,000
Level D. $25,001 to $50,000
Level E. $50,001 to $100,000
Level F. $100,001 to $500,000
Level G. $500,001 to $1M
Level H. $1,000,001 to $2.5M
Level I. Greater than $2.5M

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: North American Spine Society (NASS). Diagnosis and treatment of degenerative lumbar spinal stenosis. Burr Ridge (IL): North American Spine Society (NASS); 2007 Jan. 262 p. [394 references]

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the North American Spine Society (NASS) Web site .

Print copies: Available from the North American Spine Society (NASS), 7075 Veterans Boulevard, Burr Ridge, IL 60527; Toll-free: (866) 960-6277.

Availability of Companion Documents

The following is available:

- Diagnosis and treatment of degenerative lumbar spinal stenosis: technical report. Burr Ridge, IL: North American Spine Society, 2011. 184 p. Electronic copies: Available in Portable Document Format (PDF) from the North American Spine Society (NASS) Web site

Print copies: Available from the North American Spine Society (NASS), 7075 Veterans Boulevard, Burr Ridge, IL 60527; Toll-free: (866) 960-

6277. An order form is available from the North American Spine Society Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on July 9, 2003. The information was verified by the guideline developer on November 26, 2003. This summary was updated October 25, 2004. This summary was updated on May 3, 2005 following the withdrawal of Bextra (valdecoxib) from the market and the release of heightened warnings for Celebrex (celecoxib) and other nonselective nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI on June 16, 2005, following the U.S. Food and Drug Administration advisory on COX-2 selective and non-selective non-steroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI on October 3, 2005, following the U.S. Food and Drug Administration advisory on Paxil (paroxetine). This summary was updated by ECRI on December 12, 2005, following the U.S. Food and Drug Administration advisory on Paroxetine HCL - Paxil and generic paroxetine. This summary was updated by ECRI on May 31, 2006 following the U.S. Food and Drug Administration advisory on Paxil (paroxetine hydrochloride). This summary was updated by ECRI on November 16, 2006, following the FDA advisory on Lamictal (lamotrigine). This summary was updated by ECRI Institute on May 17, 2007 following the U.S. Food and Drug Administration (FDA) advisory on Gadolinium-based contrast agents. This summary was updated by ECRI Institute on June 20, 2007 following the U.S. Food and Drug Administration (FDA) advisory on gadolinium-based contrast agents. This NGC summary was updated by ECRI Institute on November 26, 2007. The updated information was verified by the guideline developer on December 6, 2007. This summary was updated by ECRI Institute on January 13, 2011 following the U.S. Food and Drug Administration (FDA) advisory on gadolinium-based contrast agents. This NGC summary was updated by ECRI Institute on December 29, 2011. This summary was updated by ECRI Institute on July 3, 2014 following the U.S. Food and Drug Administration advisory on Epidural Corticosteroid Injection.

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